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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,693	12/06/2004	Masamichi Inenaga	Q85096	6877

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2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER

AKANBI, ISIAKA O

ART UNIT	PAPER NUMBER
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2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/516,693

Applicant(s)

INENAGA ET AL.

Examiner

Isiaka O. Akanbi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Amendment

The amendment file 27 October 2006 has been entered into this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyokawa et al. (5,289,263).

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over of Kiyokawa. The reference of Kiyokawa teaches of the features of claim 1, comprising a wafer rotating member (M0) capable of rotating a disk-shaped wafer held on a table having a vertical rotating axis, a rotation detecting member (encoder) for detecting a rotating position of the wafer rotating member and converting the rotating position detected into an electric signal (col. 6, line 23-24), a light emitting member (M1) for emitting light toward the periphery of the wafer held by wafer rotating member (col. 5, line 3-4), a CCD linear sensor (19) including a large number of pixels linearly arranged in a predetermined order, for reading stored charges successively from the first pixel according to a transfer pulse signal and successively outputting stored charges of all the pixels as electric signals, a signal processing member (24) for repeatedly detecting the edge positions of the wafer at a plurality of optional points over the outer periphery of the wafer when it receives a signal from the CCD linear sensor and a signal from the rotation detecting member and storing these edge positions thus detected in a memory, and acquiring at least one of an orientation - flat position, notch position and center position of the wafer on the basis of the edge positions detected and an up-down counter (38) counting signals (i.e. pulses)(i.e. clockwise/counterclockwise) received from the rotation detecting member(encoder)(col. 12, line 14-57), a measured angle setting register (M0) for storing angular value information which is obtained and a comparator (22) for comparing the angular value information set in the

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measured angle setting register and the counted value of the up-down counter (figs. 6,7, 8, 12-14,18 and 21)(col. 7, line 22-49)(col. 16, line 50-64), however the reference of Kiyokawa is silent regarding the angular value information which is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation). It would have been obvious to one having ordinary skill in the art at the time of invention to provide angular value information that is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation) for the purpose of putting the value into a more convenient unit.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over of Kiyokawa. The reference of Kiyokawa teaches of apparatus/method the features of claim 2, comprising a wafer rotating member (M0) capable rotating a disk-shaped wafer held on a table having a vertical rotating axis, a rotation detecting member (encoder) for detecting a rotating position of the wafer rotating member and converting the rotating position detected into an electric signal (col. 6, line 23-24), a light emitting member (M1) for emitting light toward the periphery of the wafer held by the wafer rotating member, a CCD linear sensor (19) including a large number of pixels linearly arranged in a predetermined order, for reading out stored charges successively from the first pixel according to a transfer pulse signal and successively outputting stored charges of all the pixels as electric signals and a signal processing member (24) for repeatedly detecting the edge positions of the wafer at a plurality of optional points over the outer periphery of the wafer when it receives a signal from the CCD linear sensor and a signal from the rotation detecting member and storing these edge positions thus detected, and acquiring at least one of an orientation-flat position, notch position and center position of the wafer on the basis of the edge positions. detected, setting, in a measured angle setting register (M0), inputting a signal supplied from the rotation detecting member (encoder) in an up-down counter (38) up-counts (i.e. clockwise) during normal rotation of the wafer rotating member and down-counts (i.e. counterclockwise) during reverse rotation of the wafer rotating member, if the comparator (22) determines that rotation position information obtained as a result of an increase/decrease of the counted value in the up-down counter during the rotation of the wafer rotating member is equal to the set value in the measured angle setting register, zero-clearing (i.e. stop) the counted value simultaneously with outputting of a measurement command (col. 7, line 36-49), repeatedly

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detecting the edge position of the wafer at the measurement points over the outer periphery of the wafer, storing detected values thus obtained in a memory (figs. 13-14)(col. 18, claim 8) and acquiring at least one an orientation flat position, notch position and center position of the wafer (col. 7, line 22-49)(col. 16, line 50-64), however the reference of Kiyokawa is silent regarding the angular value information which is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation). It would have been obvious to one having ordinary skill in the art at the time of invention to provide angular value information that is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation) for the purpose of putting the value into a more convenient unit.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art wafer pre-alignment apparatus/method that may anticipate or obviate the claims of the applicant's invention.

Response to Arguments

Applicant's arguments/remarks, see pages 2-6, filed 27 October 2006, with respect to the rejection(s) of claim(s) 1-2 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

As to Applicant's arguments with respect to cited references as neither described/suggest CCD linear sensor to include a large number of pixels linearly arranged in a predetermined order, for reading out stored charges successively from the first pixel according to a transfer pulse signal and successively outputting stored charges of all the pixels as electric signals, the examiner disagrees with the applicant arguments, Kiyokawa shows CCD (col.14, 4line 44)(fig. 17), and the Applicant's arguments simply defined the operation of the CCD. As to Applicant's arguments that Kiyokawa does not suggest detecting the edge position and further that it does not suggest detecting one of an orientation flat-position, notch position and the

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center position of the wafer, the examiner disagrees with the applicant arguments, as the wafer is rotated the edge position is detected (see figs. 17, 21 and 23) and thus detect an orientation flat-position (col. 13, line 36-49). As to Applicant's arguments regarding up-down counter and comparator, Kiyokawa shows a counter (38) and comparator (22) and the Applicant's arguments defined the operations of a counter and a comparator. Additionally, as to applicant arguments that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine would have been obvious to one having ordinary skill in the art at the time of invention to provide angular value information that is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation for the purpose of putting the value into a more convenient unit.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Fax/Telephone Information

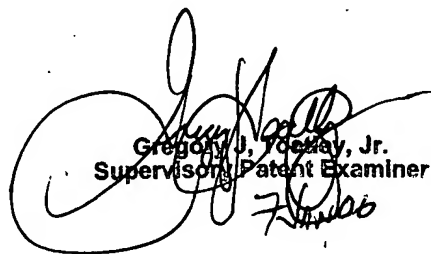
Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi
January 3, 2007



Gregory J. Toatley, Jr.
Supervisory Patent Examiner